

REMARKS

This is in response to the Office Action mailed on July 16, 2004. Claims 1-8 were pending in the application. Claims 1 and 2 were rejected. The Office Action objected to claims 5 and 7 as being dependent on a rejected base claim but otherwise contained allowable subject matter. The Office Action objected to claims 3, 4, 6 and 8 as being in improper multiple dependent form and were not further treated on the merits. In addition, the Office Action objected to the Abstract. With this amendment, the Abstract is replaced with a new abstract, and claims 1-8 are amended.

All of the claims are amended to correct unconventional spellings and/or to place the claims in typical U.S. patent practice form.

The Office Action objected to claims 3, 4, 6 and 8 under 37 C.F.R. 1.75 as being written in improper multiple dependent form. With this amendment, claims 3, 4, 6 and 8 have been amended to remove their multiple dependencies. Applicants submit that the dependent claims are now proper and request removal of the objection.

The Office Action also objected to the abstract. With this amendment, Applicants have replaced the objected-to abstract with a new abstract in compliance with the requirements set out in the Office Action. Applicants respectfully request entry of the new abstract and removal of the objection.

Claim 1 was rejected under 35 U.S.C 102(b) as being anticipated by O'Connor. Applicants respectfully traverse this rejection and submit that the features of the present claims are not shown or suggested in O'Connor. Specifically, O'Connor does not show or suggest the claimed features of "measuring the phase difference between the output signal of the first receiver and the output signal of the second receiver" where the receivers are "at two measuring points positioned at the two outer points of a line segment which crosses the course in a perpendicular manner."

The present claims set forth a system where a single hardware system of two receivers is used for a series of lanes to determine lateral position of a transponder, O'Connor teaches a system where two antenna arrays are required for each lane. This is illustrated in O'Connor figure 9. O'Connor teaches a transponder detection system with two antenna arrays 32, 34 located on opposite sides of the detection area. Each antenna array 32, 34 includes multiple antenna elements 32A, 32B, 34A, 34B respectively, as set forth in column 3, lines 65-66 and column 5, lines 63-67. Phase differences between the signals of the transponder are "measured" between the multiple antenna elements 32A, 32B as well as between the multiple antenna elements 34A, 34B. This is illustrated in O'Connor figures 7 and 8 as well as the description in connection with figure 9. In fact, O'Connor determines phase zero's using predetermined and self-introduced phase shifts (of 90 degrees as shown in figure 1) for a single antenna array 32 at one side of the detection area.

Applicants respectfully submit that because O'Connor does not teach or suggest the features of independent claim 1, claim 1 is patentably distinguishable from O'Connor and is allowable over the prior art of record. Applicants respectfully request removal of the rejection of claim 1. Claims 2-8 depend from claim 1 and, by virtue of at least their dependency, are also patentable over O'Connor.

Claim 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor in view of Ichiyoshi. Ichiyoshi is cited as teaching, in a nutshell, a modulated signal being processed through a receiver and a demodulator. Ichiyoshi is not cited for, and it does not teach, the features of claims as set forth above in connection with the rejection of claim 1. Claim 2 depends from claim 1. Referring to the discussion above in connection to the rejection of claim 1, the features of claim 2 are not shown in either O'Connor or Ichiyoshi separately and therefore cannot exist in any proposed combination of the

references. Accordingly, claim 2 is patentably distinguishable from the combination of O'Connor and Ichiyoshi. Applicants respectfully request removal of the rejection of claim 2.

Applicants respectfully acknowledge the allowability of claims 5 and 7; however, for reasons discussed above, claim 1 is allowable in its present form. In addition, it is respectfully believed that claims 3, 4, 6 and 8 are also separately patentable.

With this amendment, the claims have been amended only to correct minor informal errors and not based on any prior art. A new abstract is submitted for entry. Applicants respectfully traverse the rejections based on prior art. Applicants respectfully request removal of the objections and the claim rejections and respectfully request favorable action in the application.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By:

Steven M. Koehler, Reg. No. 36,188p
Suite 1600 - International Centre
900 Second Avenue South
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312